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10/560,244

12/12/2005

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EXAMINER

NGUYEN, HONG VINH T

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

09/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/560,244

Applicant(s)

KASHIHARA ET AL.

Examiner

Hong-Vinh Nguyen

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/12/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The amendments to specification has been noted and made part of the record.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: **slot-in portion is smaller than a cross-section of the cross-over portion** (see claim 9).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the conductor wherein the **slot-in portion is smaller than a cross-section of the cross-over portion** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Claim 9 recites the limitation "**slot-in portion is smaller than a cross-section of the cross-over portion**". There is insufficient written support for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Rejection of the original claims 1-8 is maintained as followed.

Claim 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (US 2002/0043886 A1) and further in view of Umeda et al. (US 5,936,326).

Claim 1: Fujita et al. discloses an alternator comprising a rotor with a rotor coil, a stator arranged opposed to a rotor with an electrical conductor wound on the stator core (Fig. 1). Fujita et al. further discloses a case made up of aluminum frames, this serves as a housing supporting the rotor and the stator ([0103]). The stator core is constituted by laminated core having slots, which hold the electrical conductor comprising of a rectangular slot-in portion and a circular cross-over portion ([0103]). Fujita et al. does not specifically mention the size of the two portions of the conductor, however, Fujita et al. does teach that a varnish 26 is applied to the coil-end groups thereby improving the insulating characteristics ([0143]). With an extra coat of resin or varnish, the conductor thickness of the cross-over portion must be greater than that of the conductor of the slot-in portion ([0144]).

Claim 2: Fujita et al. discloses a stator and conductor as in claim 1 above however Fujita et al. is silent on the rectangular conductor with the longer side being placed in the circumferential direction. Umeda et al. does teach a rectangular conductor being in the radial direction of the stator core and the longer side is in placed in the circumferential direction (Fig. 11). It would be obvious for a person having ordinary skill in the art to combine the teachings of Fujita et al. and Umeda et al. The motivation to do so would be to enable more configurations of the conductor to be realized as more conductor layers are added to the same slot.

Claim 3: Fujita et al. discloses a stator and conductor as in claim 1 above and further discloses that the cross-sectional shape of the slot-in portion of the conductor is rectangular and the long sides are placed in the radial direction of the stator core ([0113]).

Claim 4: Fujita et al. discloses a stator and conductor as in claim 1 above and further discloses that the slot-in portion is disposed on a line in the radial direction (Fig. 3).

Claim 5: Fujita et al. discloses a stator and conductor as in claim 1 above however, Fujita et al. fails to teach that the conductor of the slot-in portion being disposed on plural lines. Umeda et al. does teach that the conductor of the slot-in portion being disposed on plural lines in the radial direction (Fig. 3). It would be obvious for a person having ordinary skill in the art to combine the teachings of Fujita et al. and Umeda et al. One would be motivated to do so to improve heat radiation and improve performance of the device.

Claim 6: Fujita et al. disclose a stator and conductor as in claim 1 above yet fails to teach that the conductor of the slot-in portion located in the slot is impregnated with insulating resins. However, Umeda et al. does. Umeda et al. discloses that the conductor has an insulating cover film or a fixed insulating film formed by an impregnation process. It would be obvious for a person having ordinary skill in the art to combine the teachings of Fujita et al. and Umeda et al. One would be motivated to do so to prevent the conductor portions from interfering with one another, as well as the insulating the conductor from the stator core.

Claim 7: Fujita et al. discloses a stator and conductor as in claim 1 above and further discloses that the crossover portion is shielded by a case comprising of aluminum frames (Fig. 1 and [0103]). This is equivalent to the metallic housing as claimed in the instant application.

Claim 8: Fujita et al. discloses a stator and conductor as in claim 1 above and further discloses the charging and discharging air holes formed in the casing.

Claim 9: Fujita discloses an alternator as in claim 1 above, wherein a cross-section of the slot-in portion is smaller than a cross-section of the cross-over portion (see [0111]).

Claim 10: Fujita discloses an alternator as in claim 1 above, however fails to disclose that the insulation coating in the slot-in portion and the insulation coating in the cross-over section are made of the same material. Umeda does teach the insulating layers comprising insulating cover films on the electric conductor, and the slot-in portion may be further insulated with an impregnation process (see col. 2 line 61-65). It would be obvious for a person having ordinary skill in the art at the time of the invention to provide the same insulation material for the entire conductor to reduce manufacturing costs and simplify manufacturing procedure.

Response to Arguments

Applicant's arguments filed 07/12/2007 have been fully considered but they are not persuasive. Fujita discloses a conductor having a "circular cross section with a large radius of curvature, the contact stress is small and it is difficult for the **insulating coating** to become damaged" (see [00016]). Fujita is teaching that the conductor 18

has the insulating coating including the slot-in portion as well as the cross-over portion 19. The insulating coating taught by Fujita is there to prevent short circuiting between the coils segments. The spacing between the coils in the cross-over portion is larger than the spacing between the coil and the slot to prevent the conductors from short circuiting (see Fig. 29). Therefore, the extra coat of varnish 26 on the cross-over portion 19 provides the thickness of the insulation of the cross-over portion to be larger than the thickness of the insulation of the slot-in portion.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong-Vinh Nguyen whose telephone number is (571) 270 1743. The examiner can normally be reached on Monday through Friday 8 am to 5 pm (EST).

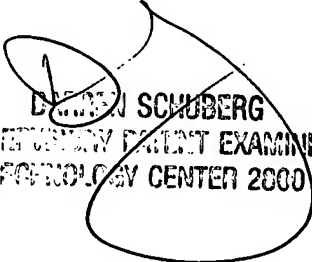
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HVN

9/7/2007


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